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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,857	10/22/2001	Ivar I. Primdahl	P/772-304	7692

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EXAMINER

KERNS, KEVIN P

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,857

Applicant(s)

PRIMDAHL, IVAR I.

Examiner

Kevin P. Kerns

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings.
2. The drawings are objected to because the drawing is very light, with pen markings faded, such that the drawing text, reference number 3, and the pen lines around burner 2 and combustion chamber 1 are so faded that these features are difficult to distinguish. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of

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any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because the term “comprising” (legal phraseology) should be changed to “including” (or equivalent term). Correction is required. See MPEP § 608.01(b).

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the claim 4 limitation “reformat” is absent from the specification.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Koyama et al. (US 4,935,037).

Koyama et al. disclose a fuel reforming process and apparatus that includes a combustion chamber (burner/combustor 15 in the bottom of the chamber and having outlet means communicating with a duct), which is fed by fuel tube 19 (hydrocarbon + steam) and air supply tube 18, or raw fuel supply tube 25 (methane + steam) to produce a combustion product; a catalytic reactor (region packed with reforming catalyst 6); a duct that connects the combustor to the catalytic region; and withdrawal ducts for the reformat products (abstract; column 1, lines 44-68; column 2, lines 1-23; column 3, line 1 through column 4, line 46; column 5, lines 6-68; column 6, lines 1-35 and 62-68; column 7, lines 1-43; and Figures 1-8).

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Beshty (US 4,946,667).

Beshty discloses a method and apparatus of steam reforming methanol to hydrogen, in which the apparatus includes a combustion chamber (burner/superheater 14) that receives hot gaseous steam/methanol fuel from inlet 16 in the presence of air/oxygen via conduit 15; a catalytic reactor (reformer 18) for steam reforming; ducts (14A,17) connecting the burner chamber to the catalytic reactor; and withdrawal ducts (19,19A,21,22) for withdrawing the product/reformat (abstract; column 1, lines 10-14; column 3, lines 15-68; column 4, lines 1-52; and Figure 1). In the embodiment of Figure 6, the bottom of the combustion chamber includes a burner 227 having inlets for feed fuel and oxidant, with the top of the combustion chamber including outlet means communicating with a duct (column 5, lines 24-68; column 6, lines 1-8; and Figure 6).

8. Claims 1, 3, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Abens et al. (US 4,588,659).

Abens et al. disclose a fuel vaporizer for a reforming apparatus that supplies fuel to fuel cells, in which the apparatus includes a combustion chamber that is fed by a fuel gas line 3 (containing hydrocarbon liquid fuel and water to be vaporized at vaporizer 9 from supply line 11) and an oxidant gas line 4, such that the combustion chamber includes burner 14; a catalytic reactor/reformer 8; a duct from the burner to the reformer 8; and withdrawal ducts (5,6) feeding load 7 (abstract; column 2, lines 7-37 and 61-68; column 3, lines 1-30; and Figure 1). In one embodiment, the autothermal reforming process includes vaporizing a hydrocarbon/water mixture in a burner 45 within a combustion chamber in the presence of air (air inlet); withdrawing the combustion product through outlet ducts that connect to a catalytic reformer (annular catalyst chamber 42); and withdrawing the reformat through ducts at the top of the apparatus (column 4, lines 62-68; column 5, lines 1-28; and Figure 5).

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sederquist (US 5,470,360).

Sederquist discloses a fuel cell power plant reformer burner gas flow control system, in which the system includes a combustion chamber (56,58) having a burner in the bottom of the chamber; a plurality of catalyst reactors (reformer tubes 16); ducts that connect the combustion chamber to the catalyst reactors (abstract; column 1, lines 7-

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12; column 2, lines 21-31 and 49-67; column 3, lines 1-29 and 50-57; column 4, lines 1-17; and Figure 1).

10. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Boucot et al. (US 5,632,787).

Boucot et al. disclose a process and device for manufacturing synthesis gas, in which the process and device include combusting a mixture of hydrocarbon and steam with oxygen in a combustion chamber; withdrawing the combustion product through a duct leading to a reforming reactor with a catalytic bed 4; and catalytically reforming the combustion product to produce a reformat to be withdrawn from one or several outlets 8 at the bottom of the catalytic bed 4 (abstract; column 2, lines 24-57; column 3, lines 5-43; column 7, lines 59-67; column 8, lines 1-9; and Figures 1 and 2).

11. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Verrill et al. (US 5,938,800).

Verrill et al. disclose a compact multi-fuel steam reformer and process for using the reformer, in which the reformer and process include combusting a mixture of hydrocarbon and steam with flue gases (including air) in a combustion chamber; withdrawing the combustion product through a duct leading to a reforming reactor with a catalytic bed; and catalytically reforming the combustion product to produce a reformat to be withdrawn from outlets at the bottom of the catalytic bed reactor (abstract; column 3, lines 12-60; column 4, line 25 through column 8, line 43; and Figures 1-4).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin P. Kerns *Kevin Kerns 7/2/04*
Examiner
Art Unit 1725

KPK
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July 2, 2004